

CLAIMS

1. An apparatus for preventing leakage of a material inside a bulb for a plasma lighting system, comprising:

5 a bulb containing a discharge material therein for emitting light as the discharge material becomes a plasma state by an electric field; and

a magnetic field forming portion for preventing the discharge material of a plasma state from being leaked by an external electric field of the bulb by forming a magnetic field at a peripheral portion of the bulb.

10

2. The apparatus of claim 1, wherein the magnetic field forming portion forms a magnetic field as a wedge shape so that the discharge material be positioned at a center of the bulb.

15

3. The apparatus of claim 1, wherein the discharge material comprises sodium (Na).

4. The apparatus of claim 2, wherein the discharge material comprises Na.

20

5. An apparatus for preventing leakage of a material inside a bulb for a plasma lighting system, comprising:

a resonator;

a bulb received in the resonator and containing a discharge material

therein for emitting light as the discharge material becomes a plasma state by an electric field; and

a magnetic field forming portion for preventing the discharge material of a plasma state from being leaked by an external electric field of the bulb by
5 forming a magnetic field at a peripheral portion of the bulb.

6. The apparatus of claim 5, wherein the magnetic field forming portion forms a magnetic field as a wedge shape so that the discharge material be positioned at a center of the bulb.

10

7. The apparatus of claim 6, wherein the magnetic field forming portion is implemented as an electromagnet.

8. The apparatus of claim 6, wherein the magnetic field forming
15 portion is implemented as a permanent magnet.

9. The apparatus of claim 5, wherein the discharge material comprises Na.

20 10. The apparatus of claim 6, wherein the discharge material comprises Na.

11. An apparatus for preventing leakage of a material inside a bulb for a plasma lighting system, comprising:

a casing;

a magnetron mounted in the casing;

a wave guide connected to the magnetron for guiding electromagnetic wave;

5 a resonator connected to the wave guide for resonating electromagnetic wave;

 a bulb received in the resonator and containing a discharge material therein for emitting light as the discharge material becomes a plasma state by an electric field; and

10 a magnetic field forming portion for preventing the discharge material of a plasma state from being leaked by an external electric field of the bulb by forming a magnetic field at a peripheral portion of the bulb.

12. The apparatus of claim 11, wherein the magnetic field forming
15 portion forms a magnetic field as a wedge shape so that the discharge material be positioned at a center of the bulb.

13. The apparatus of claim 12, wherein the magnetic field forming
portion is implemented as an electromagnet.

20

14. The apparatus of claim 12, wherein a reflector having the resonator therein for forwardly reflecting light generated from the bulb is installed at a front side of the casing.

15. The apparatus of claim 14, wherein the magnetic field forming portion is installed accordingly as the electromagnet is mounted in a housing and the housing is positioned at an outer circumferential surface of the reflector.

5

16. The apparatus of claim 12, wherein the magnetic field forming portion is installed accordingly as the electromagnet is mounted in a housing and the housing is coupled to the casing.

10

17. The apparatus of claim 12, wherein the magnetic field forming portion is implemented as a permanent magnet.

18. The apparatus of claim 17, wherein the permanent magnet is attached to an outer circumferential surface of the casing.

15

19. The apparatus of claim 11, wherein the discharge material comprises Na.

20. The apparatus of claim 12, wherein the discharge material comprises Na.

20